

Science Flight Report

Operation Ice Bridge Spring 2010



UAF Alaska Flight No 2
Mission Plan: Stikine Icefield

Flight Report Summary

Aircraft	DHC-3 Otter
Flight Number	UAF-2
Flight Request	10M014
Flight Hours	8.0
Take off time	08:00:00.00 Z from Wrangell
Landing time	16:00:00.00 Z at Ultima Thule Outfitters Lodge
Date	Wednesday, May 17 2010, Day of Year 137
Purpose of Flight	LiDAR surveys of glaciers within the Stikine Icefield, SE Alaska.
Aircraft Status	Airworthy.
Sensor Status	operational.
Significant Issues	None.
Accomplishments	<ul style="list-style-type: none"> • LiDAR profiles of Stikine Icefield, including the Sawyer, South Sawyer, Dawes and North Dawes Glaciers. • Conducted one pass over runway at Wrangell airport for LiDAR instrument calibration.
Planned Events	<ul style="list-style-type: none"> • This flight completed the Stikine Icefield surveys.

Science Data Report Summary

This mission performed LiDAR surveys of the remaining flightlines in the Stikine Icefield, including the Sawyer, South Sawyer, Dawes and North Dawes Glaciers. The weather remained perfect throughout the entire day.

LiDAR data were collected at a height of 500-650 meters above the glacier surface, and mapped a 0.5 km wide swath along the centerline of the glaciers. This swath map consists of measurements from individual laser shot points on a roughly 1 meter by 1 meter grid. The individual point measurements of the glacier surface latitude, longitude and elevation have an accuracy of approximately ± 10 cm.

Geographic keywords: (Stikine Icefield, SE Alaska)

Repeat Mission: yes (2009, 2000, 1995)

Instrument	Instrument Operational		Data Volume for Days 136+137	Instrument Issues
	Target area	Entire Flight		
UAF LiDAR	Yes	No	1.85 GB in raw binary format	None
GPS	Yes	Yes	832 MB in raw binary format	None
IMU	Yes	Yes	379 MB in raw binary format	None

Mission Log (Chris Larsen)

Today's mission is LiDAR surveys of glaciers the Stikine Icefield, Sawyer, South Sawyer, Dawes and North Dawes Glaciers. The weather remained perfect throughout the entire day. The flight was ended in at Ultima Thule Outfitters Lodge. This mission completed the survey flights over the Stikine Icefield.

Individual instruments on board the aircraft:

LiDAR: The UAF LiDAR systems worked well.

GPS: System worked normally. No problems.

IMU: System worked well. No issues.



Figure 1: LiDAR ground tracks over Stikine Icefield for days 136+137 (May 16-17, 2010).



Figure 2: Rising above the southern Stikine Icefield, the Devil's Thumb and Cat's Ears, with Mt. Burkett and Burkett Needle in the background.



Figure 3: Ultima Thule Outfitters DHC-3 Cockpit, Paul Claus pilot.